

Method of Forming an Oxide Layer Using a Mixture of a Supercritical State Fluid and an Oxidizing Agent

ABSTRACT OF THE DISCLOSURE

A method of forming an oxide layer. A fluid, such as water, is heated and pressurized to supercritical or near-supercritical conditions and mixed with at least one oxidizing agent. The supercritical state mixture of the fluid and at least one oxidizing agent is then applied on the workpiece, forming an oxide layer on the workpiece. The at least one oxidizing agent may comprise nitrogen, and the oxide layer formed on the workpiece may comprise a nitrogen doped oxide.